

### REMARKS

Claims 1-16 and 37 were previously pending in this application. By this amendment, Applicant is canceling claim 2, without prejudice or disclaimer. Claims 1, 13, and 37 have been amended. No new claims have been added. As a result claims 1, 3-16, and 37 remains pending for examination, with claims 1 and 37 being independent claims. No new matter has been added and support for the amendments to the claims can be found throughout the specification, including the claims, as filed.

#### Objection to the Drawings

The drawings have been objected to as failing to include reference numeral 36. A proposed drawing correction of FIG. 2 including reference numeral 36 is included for consideration. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the objection to the drawings.

#### Objection to the Specification

The disclosure is objected to because of informalities in claim 13. Applicant has amended claim 13 to remove a comma following the word "sodium" so that the pertinent portion of claim 13 reads "sodium hypochlorite." No new matter has been added by correcting this obvious typographical error. Applicant respectfully requests reconsideration and withdrawal of the objection to the specification.

Applicant has also corrected a typographical error in the specification. In the paragraph beginning on page 9, line 20 of the specification, Applicant has referred to a publication to note that ultraviolet lamps tend to have decreasing intensity with use as explained in the sentences preceding and following the sentence citing a reference that has been inadvertently incorporated by reference. Applicant has merely supported this notion by citing the reference. The material inadvertently incorporated by reference is not essential and need not be incorporated by reference. Applicant respectfully requests entry of the amendment to the specification.

Rejection under 35 U.S.C. § 112

Claims 13 and 14 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. Independent claim 1 has been amended by incorporating the subject matter in dependent claim 2 such that the subject matter of independent claim 1 recites a water system comprising a halogen species source disposed to add a halogen species to the water system and a control system for receiving and analyzing the input signal and regulating the free radical species source and the halogen species source to maintain any of a predetermined ORP, COD, TOC and chloramine level in the water system. Therefore, the limitation recited in dependent claims 13 and 14 has sufficient antecedent basis. No new matter has been added by these amendments.

Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection under 35 U.S.C. § 112, second paragraph.

Rejections Under 35 U.S.C. § 102

Claims 1, 3, 4, 6-10, 15, 16 and 37 stand rejected under 35 U.S.C. § 102(b) as being anticipated by the teaching of Yo in Japanese Patent Application Publication JP 11-057752A (Yo).

Applicant disagrees that the teaching of Yo anticipates the subject matter of independent claims 1 and 37. Yo appears to disclose a method and system for TOC removal by addition of a hydroxyl radical from ozone and hydrogen peroxide, with UV radiation to generate the hydroxyl radicals. However, Yo does not teach a water system comprising a halogen species source or a means for providing a halogen species to water in the water system. Thus, the teaching of Yo cannot anticipate the subject matter of independent claims 1 and 37. Dependent claims 3, 4, 6-10, 15 and 16 depend, ultimately, from independent claim 1. These dependent claims further recite additional features of the invention and, for at least the same reasons discussed above, cannot be anticipated by the teaching of Yo. Further, Yo fails to teach an ultraviolet radiation source that has a power output of less than about 1 KW or a water system wherein the chloramine level in the water system is less than about 2 ppm, or even less than about 1 ppm or even wherein the ORP range in the water system is about 700 mV to about 850 mV, or about 750 mV +/- 1%, or wherein the addition of a halogen species is regulated to about 0.1 ppm to about 10 ppm.

Claims 1-9, 14-16 and 37 stand rejected under 35 U.S.C. § 102(b) as being anticipated by the teaching of Gray et al. in U.S. Patent No. 5,470,480 (Gray et al.).

Applicant disagrees that the teaching of Gray et al. anticipates the subject matter of independent claims 1 and 37. Gray et al. teach a process for treating wastewater effluent by forming hydroxyl ions with UV and hydrogen peroxide to reduce BOD, COD, AOX, and color in pulp mill effluent. Like Yo, Gray et al. fails to disclose a water system comprising a halogen species source disposed to add halogen species to the water system or a means for providing halogen species to water in the water system. Significantly, Gray et al. teach reducing AOX concentration; against adding a halogen to the water system. Gray et al. also fail to teach a control system for receiving and analyzing an input signal and regulating a free radical species source and a halogen species source to maintain any of a predetermined ORP, COD, TOC and chloramine level in the water system or a means for regulating an amount of free radical species and an amount of halogen species provided to the water to maintain a desirable water quality of water in the water system. Therefore, the teaching of Gray et al. cannot anticipate the subject matter of independent claims 1 and 37.

Dependent claims 3-9 and 14-16 depend, ultimately, from independent claim 1. The subject matter of these dependent claims also cannot be anticipated by the teaching of Gray et al. for at least the same reasons discussed above. Dependent claim 2 has been cancelled thereby rendering the rejection as to this claim moot.

Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejections under 35 U.S.C. § 102.

#### Rejections Under 35 U.S.C. § 103

Claims 11-13 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the teaching of Gray et al. in view of the teaching of Martin et al. in U.S. Patent No. 6,149,819 (Martin).

Applicant disagrees that dependent claims 11-13 are unpatentable over the teaching of Gray et al. in view of the teaching of Martin et al.

As mentioned above, Gray et al. fail to teach a water system comprising a halogen species source disposed to add halogen species to the water system or a means for

providing halogen species to water in the water system. Gray et al. also fail to teach a water system comprising a control system for receiving and analyzing an input signal and regulating a free radical species source and a halogen species source to maintain any of a predetermined ORP, COD, TOC and chloramine level in the water system or one comprising a means for regulating an amount of free radical species and an amount of halogen species provided to water to maintain a desirable water quality of water in the water system. Martin et al. fail to provide any teaching, suggestion or motivation for a water system comprising a free radical species source fluidly connectable to the water system or comprising a means for providing free radical species to water in the water system and a controller or means for regulating free radical species and halogen species provided to the water system. Thus, there is no *prima facie* case of obviousness.

Accordingly, Applicant requests reconsideration and withdrawal of the rejection under 35 U.S.C. § 103.

### CONCLUSION

In view of the foregoing Amendments and Remarks, this application is in condition for allowance. A notice to this effect is respectfully requested. If the Examiner believes that the application is not in condition for allowance, the Examiner is requested to call Applicant's attorney at the telephone number listed below.

If this response is not considered timely filed and if a request for extension of time is otherwise absent, Applicant requests any necessary extension of time. If there is a fee occasioned by this response, including an extension fee that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 50/0214.

Respectfully submitted,  
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